

ENCLOSED LITTER BOX

5 CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Patent Application entitled "LITTER BOX", attorney docket number 51665/FLC/S1137 filed December 15, 2003, which is hereby incorporated by reference as if fully stated herein.

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BACKGROUND OF THE INVENTION

This invention pertains generally to litter boxes and more particularly to enclosed litter boxes having removable litter trays.

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Urban pet owners must often provide sanitary facilities for their pets. For cats especially, these sanitary facilities may include a shallow open box filled with an absorbent material termed "litter". Such an arrangement is known as a litter box. A pet enters the litter box and leaves waste inside the box mixed with the litter. A pet owner must then clean the animal waste from the litter box on a regular basis, often by separating the animal waste from the litter and disposing of the animal waste.

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Various improvements in the simple litter box are well known in the art. Most of these improvements include better ways of containing the litter, separating the animal waste from the litter, and disposing of the animal waste. However, very little inventive effort has been directed to incorporating a litter box into an urban household in an aesthetically pleasing yet functional manner even though this is what most consumers want from their household appliances. Most pet owners seek a litter box that is attractive in shape and pattern yet incorporates useful features that speed the process of litter maintenance while minimizing pet owner contact with animal waste.

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SUMMARY OF THE INVENTION

5 An enclosed litter box having a slidably removable litter tray and an integral manual rake is provided. The litter box includes an enclosure with an arched top having a compound curved surface. An exterior surface of the enclosure may be decorated with various motifs. The sliding removable litter tray includes a molded recessed handle in a front protruding surface. An upper rim of the tray includes one or more integral channels for support of the rake. The channels may include storage and travel limit keying indentations to securely yet removably hold the rake in various positions during storage and use. The litter tray bottom may include a transverse ridge dividing the litter tray into a fresh litter area and a used litter area. By manipulating the rake, a user transfers animal wastes from the fresh litter area to the used litter area for removal of the animal waste.

20 BRIEF DESCRIPTION OF THE DRAWINGS

These and other features, aspects, and advantages of the present invention will become better understood with regard to the following description, appended claims, and accompanying drawings where:

25 FIG. 1 is a perspective drawing of an enclosed litter box in accordance with an exemplary embodiment of the present invention;

FIG. 2a is an exploded view of the enclosed litter box of FIG. 1;

30 FIG. 2b is a perspective view of a scoop in accordance with an exemplary embodiment of the present invention;

FIG. 3 is a detail drawing of a rake grab feature for an enclosed litter box in accordance with an exemplary embodiment of the present invention;

35 FIG. 4 is a partial cross-section of a removable litter

tray and rake in accordance with an exemplary embodiment of the present invention;

FIG. 5 is a perspective drawing of the use of a combination rake and scoop in a raking motion in accordance with an exemplary embodiment of the present invention;

FIG. 6 is a perspective drawing of the use of a combination rake and scoop in a scooping motion in accordance with an exemplary embodiment of the present invention;

FIG. 7 is an exploded view of a decorative label affixed to an enclosure of an enclosed litter box in accordance with an exemplary embodiment of the present invention;

FIG. 8 is a perspective view of an enclosed litter box having a decorative motif in accordance with an exemplary embodiment of the present invention;

FIG. 9 is a top view of the enclosed litter box of FIG. 8;

FIG. 10 is a right side view of the enclosed litter box of FIG. 8;

FIG. 11 is a front view of the enclosed litter of FIG. 8;

FIG. 12 is a perspective view of an enclosed litter box having a checked print decorative motif in accordance with an exemplary embodiment of the present invention;

FIG. 13 is a perspective view of an enclosed litter box having a flower print decorative motif in accordance with an exemplary embodiment of the present invention; and

FIG. 14 is a perspective view of an enclosed litter box having a polka dot print decorative motif in accordance with an exemplary embodiment of the present invention.

DETAILED DESCRIPTION

FIG. 1 is a perspective drawing of an enclosed litter box in accordance with an exemplary embodiment of the present invention. FIG. 2a is an exploded view of the enclosed litter

box of FIG. 1. In the figures, like numbered elements indicate the same feature of the invention. Referring now to both FIG. 1 and FIG. 2a, an enclosed litter box 100 includes a generally arched enclosure 102 removably mounted onto a chassis 104. A sliding removable litter tray 106 is mounted inside the chassis.

The enclosure includes a front surface 108 and a back surface 109. The front surface has an opening 110 for entry of a small animal. The front surface also includes a notched recess 112 for receiving a front portion 114 of the sliding tray. An upper surface 116 of the enclosure is arched and slopes from the front surface to the back surface creating a compound curve. A rearward portion of the upper surface includes one or more ventilation slots 118 evenly disposed from a left side to a right side of the enclosure. The slots are elongated having a long axis substantially aligned along a longitudinal axis of the enclosure. The openings in the slots may be closed by a cover (not shown) slidably coupled to the enclosure. The enclosure further includes a triangular notched recess 119 for holding an accessory item such as an external rake or scoop.

The sliding tray is removably and slidably coupled to the chassis. The litter tray includes an integral recessed handle 120 in a protruding front portion of the tray 121 for grasping by a user of the litter tray for removal. The handle has a generally downward facing opening allowing a user to insert their fingers into the litter tray handle without placing any portion of their hand within an interior space of the litter tray.

The enclosed litter box is freestanding in that the litter tray may be removed from the chassis for cleaning without removing the enclosure from the chassis. This obviates the need for a second area to place the enclosure

when the litter tray is being cleaned.

A manual rake 122 is positioned within the litter tray. A front or handle portion of the rake 124 is coupled to a rear rail having a tined portion 126 by one or more side rails 128. The handle portion and rear rail combined with the side rails create a rake having a generally rectangular configuration having radiused corners. The tines project from the rear rail of the rake and generally downward into the litter tray. Each side rail of the rake include one or more ear portions 130 that ride over an upper rim 132 of the litter tray. The ears locate the rake within the litter tray to minimize lateral movement of the rake as the rake is pulled through any litter in the litter tray.

FIG. 2b is a perspective view of a scoop in accordance with an exemplary embodiment of the present invention. A scoop 250 is used to remove animal wastes from the litter tray. The scoop includes a slotted blade portion 252 for holding animal wastes from the litter tray. The slots are wide enough to permit litter to pass through the blade and fall back into the litter tray but not so wide as to allow the animal wastes to fall through. The blade portion further includes a plurality of spaced notches 258. The notches are spaced such that they engage the tined portion 126 of the rake 122 (both of FIG. 2a) and may be used to clean the rake using a combing motion. The scoop further includes a handle portion 256 terminating in a triangular shaped hook portion 254 projecting substantially perpendicularly from the handle portion. The hook portion mates with notched recess 119 of enclosure 102 (of FIG. 2a) to form a gravity lock for removably attaching the scoop to the enclosure. The tapered sides of the hook mate with the tapered sides of the notched recess forming a gravity lock preventing the hook from sliding out of the notched recess.

FIG. 3 is a detail drawing of a rake grab feature for an enclosed litter box in accordance with an exemplary embodiment of the present invention. The removable litter tray 106 includes a groove 200 running longitudinally along the top rim portion 132 of the protruding portion 114 of the litter tray. The groove receives the handle portion 124 of the removable rake 122 while the rake is resting in the litter tray and serves as a storage key indentation holding the rake in place. One portion of the groove includes an opening 202 passing from a bottom surface of the groove into an interior portion 204 of the recessed handle 120. When a user wants to grasp the rake by its handle portion, a user inserts their fingers into the recessed handle and up through the opening between the interior portion of the handle and the bottom of the groove. The user may then push (206) the handle of the rake, thus dislodging the rake out of the groove allowing the user to grasp the handle. This allows a user to retrieve the rake without touching an interior portion 208 of the litter tray.

FIG. 4 is a partial cross-section of a removable litter tray and rake in accordance with an exemplary embodiment of the present invention. To use the rake 122, a user partially slides the removable litter tray 106 out of the enclosure (not shown). The user then grasps the rake by a handle portion 124 and pulls (300) the rake across a fresh litter portion 301 of the litter tray. As the user pulls the rake, the tines of the rear portion 126 of the rake rest on a bottom surface 302 of the litter tray. As the rake is moved, the tines collect animal waste 304 from the fresh litter portion while allowing the litter to pass through the tines. When the tines encounter a transverse ridge 306 in the bottom surface of the litter try, the tines and rake are urged upward out of the fresh litter portion into a used litter portion 308 of the tray. A user then uses a scoop or other device to remove the

animal waste from the used litter portion of the litter tray.

5 In one embodiment of a litter tray in accordance with the present invention, the upper rim 132 of the litter tray includes one or more storage key indentations 310. The storage key indentations provide a positive tactile indication to the user that the rake has been placed into the rake's storage position on the top rim of the litter tray. The
10 storage key indentations further serve to secure the rake in the storage position. The top rim of the litter tray further includes one or more usage key indentations 312. The usage key indentations provide a tactile indication to the user that the rake has reached the end of its travel position and that
15 the animal wastes have been transferred to the used litter portion of the litter tray. The usage key indentations further provide a means to limit the travel of the rake through the litter in the litter tray.

FIG. 5 and FIG. 6 are perspective drawings of the use of
20 a combination rake and scoop in accordance with an exemplary embodiment of the present invention. The tined portion 126 of the rake may be fully extended across a back rail 400 of the rake and then extend partially along the side rails, 128 and 129, of the rake thus forming one or more side tined portions
25 401 on the rake. In a raking mode, a user pulls (402) the tined portion of the rake through the litter 410 in the litter tray 106 while holding the side rails of the rake substantially horizontal during the raking motion. This raking motion separates animal waste 304 from the litter.
30 After the user has separated the animal waste from the litter, the user may then tilt (404) the rake until the side rails are substantially vertical, thus supporting the animal waster on the tined portion of the rake. This allows the user to lift the animal waste out of the litter tray for disposal.

35 FIG. 7 is an exploded view of a decorative label affixed

to an enclosure of an enclosed litter box in accordance with an exemplary embodiment of the present invention. An upper decorative label 500 includes an outer surface 502 and an inner surface 504. The outer surface may be printed in a variety of fanciful or decorative motifs. The inner surface is coated with an adhesive material that allows the inner surface of the upper label to adhere to an outer surface 506 on an enclosure 102. A front label, 507 includes an outer surface 508 which is printed in a decorative motif corresponding to the decorative motif of the upper label. The front label includes an inner surface (not shown) that is coated with an adhesive material. The adhesive allows the inner surface of the front label to adhere to a front surface 108 of the enclosure.

During manufacturing, the enclosure is constructed from an injected molded plastic without any decorative elements. The upper label and front label may be created in a conventional printing process to include any type of printable motif. The labels are then affixed to the outer surface of the enclosure to create an attractive outer appearance and pattern for the enclosed litter box.

In one embodiment of an enclosure and label, the enclosure's outer surface includes a background color or pattern. In this embodiment, the label is printed onto a transparent substrate and uses a transparent adhesive. Once applied, the effect of the overall pattern of the enclosed litter box is achieved from the superposition of the printed label pattern onto the background pattern of the enclosure's outer surface which is partially visible through the transparent substrate and adhesive of the label.

FIG. 8 is a perspective view of an enclosed litter box 800 having a decorative motif in accordance with an exemplary embodiment of the present invention. In this embodiment, the

litter box enclosure includes a leopard print motif.

FIG. 9 is a top view of the enclosed litter box 800 of FIG. 8.

FIG. 10 is a right side view of the enclosed litter box 800 of FIG. 8.

FIG. 11 is a front view of the enclosed litter box 800 of FIG. 8.

FIG. 12 is a perspective view of an enclosed litter box 1200 having a decorative motif in accordance with an exemplary embodiment of the present invention. In this embodiment, the litter box enclosure includes a checked print motif.

FIG. 13 is a perspective view of an enclosed litter box 1300 having a decorative motif in accordance with an exemplary embodiment of the present invention. In this embodiment, the litter box enclosure includes a flower print motif.

FIG. 14 is a perspective view of an enclosed litter box 1400 having a decorative motif in accordance with an exemplary embodiment of the present invention. In this embodiment, the litter box enclosure includes a polka dot print motif.

Although this invention has been described in certain specific embodiments, many additional modifications and variations would be apparent to those skilled in the art. It is therefore to be understood that this invention may be practiced otherwise than as specifically described. Thus, the present embodiments of the invention should be considered in all respects as illustrative and not restrictive, the scope of the invention to be determined by any claims supported by this application and the claims' equivalents rather than the foregoing description.